

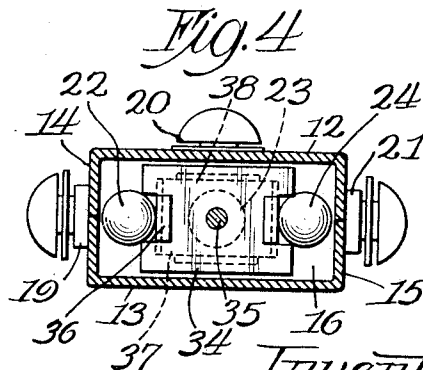
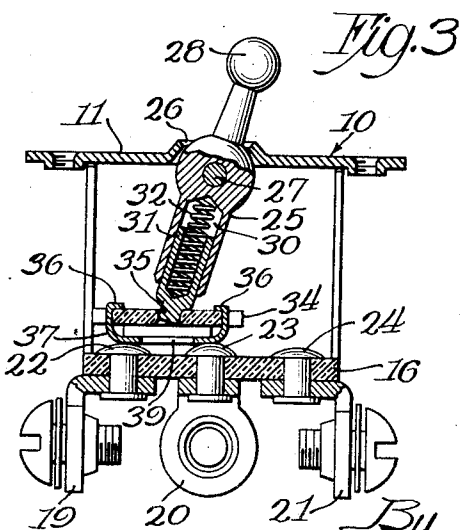
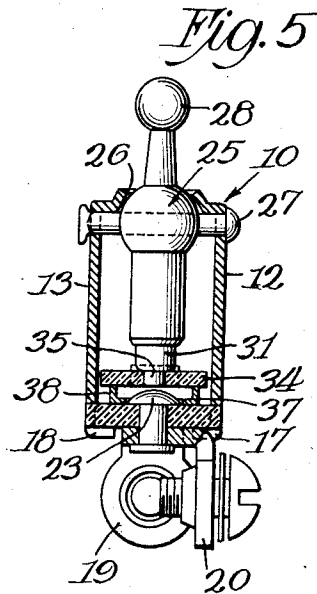
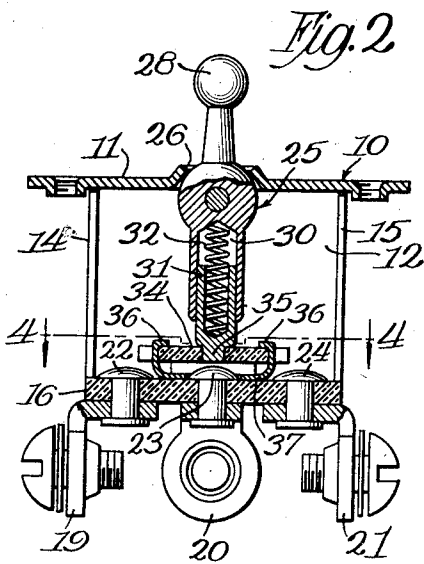
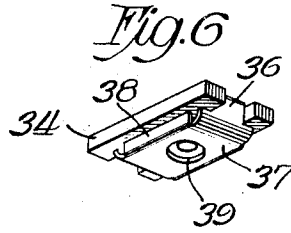
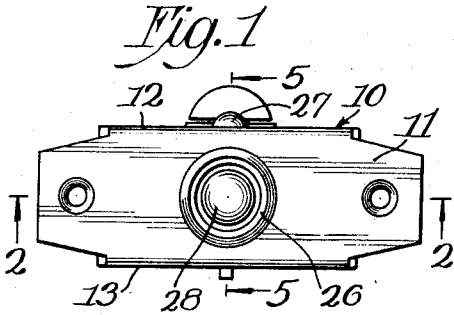
May 26, 1931.

L. M. WILEY

1,806,777

ELECTRIC SWITCH

Filed Aug. 12, 1929



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UNITED STATES PATENT OFFICE

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ELECTRIC SWITCH

Application filed August 12, 1929. Serial No. 385,245.

The invention relates to electric switches of the lever type, and has for its principal objects—to provide a switch having a positive neutral position and in which an increased spring pressure is effectuated between the contact members to insure a proper closing of circuits whenever the switch lever is moved from its neutral position.

Other and further objects and advantages will appear as the disclosure proceeds and the description is read in conjunction with the accompanying drawings, in which:

Fig. 1 is a plan view of the assembled switch;

Fig. 2 is a longitudinal vertical section of the switch taken on the line 2—2 of Fig. 1, and showing the switch lever in its neutral position.

Fig. 3 is a longitudinal vertical section taken on line 2—2 of Fig. 1, but showing the switch lever in contact position;

Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 2;

Fig. 5 is a transverse vertical sectional view taken on the line 5—5 of Fig. 1, and showing the switch lever in neutral position; and

Fig. 6 is a perspective of the slide plate member.

In the selected embodiment of this invention a switch housing, generally designated 10, is employed, which may be stamped from a single piece of metal, and which comprises a face plate 11, side walls 12 and 13 and end walls 14 and 15. The face plate 11 is apertured at each end to accommodate attaching screws.

A terminal plate 16 of insulating material is secured to the end of the housing 10 opposite to the face plate 11, as by means of fingers 17 and 18 projecting from two of the side walls of the housing and being folded against the outer face of the plate. Binding posts 19, 20 and 21 are attached to the outer face of the plate 16 as by means of rivets 22, 23, 24, the heads of which are within the housing and are arranged in line and constitute terminals with which the switch cooperates. The central terminal 23 is intended to cooperate with the leading-in wire;

the other two terminals cooperating with local circuits.

A slidable contact or a bridging plate 37 cooperates with the several terminals, being of sufficient length to connect the terminal 23 with either of the local circuit terminals, but being of less length than the distance between the terminals 22 and 24.

The plate 37 is recessed or apertured midway of its ends, as shown at 39, to fit over the central terminal and be thereby held in open circuit position. In order that the slide plate 37 may be shifted from the central or neutral position the terminal 23 is rounded, preferably as shown, being dome shaped. Preferably also, though not necessarily, the terminals 22, 24 are similarly shaped.

The plate 37 is controlled by means of a lever 25 pivoted within the housing 10, as shown at 27, its handle 28 projecting outwardly through an aperture 26 in the face plate 11. A plunger 31 slidably housed within and projecting from a longitudinal recess 30 within the body of the lever 25 and opening through the lower end thereof is flexibly connected with the plate 37 and is urged into engagement therewith by a spring 32 reacting against the inner end of the recess 30.

In order that the contact plate 37 may not be electrically connected with the lever it is provided with an insulating plate 34 apertured to loosely receive the end 35 of the plunger 31. The plate 34 is secured to the plate 37 by any suitable means, as shown by lugs 36 projecting from the ends of the plate 37 and folded over the ends of the plate 34. These two plates are preferably spaced apart as by means of flanges 38 formed on the side margins of the plate 37 and bearing against the contiguous face of the plate 34.

When the switch is in neutral or open circuit position, as shown in Fig. 2, the contact plate 37 fits over the terminal 23 and is held against accidental displacement therefrom by the spring 32. By shifting the lever 25 in either direction the contact plate is disengaged from the terminal 23 and moved over into engagement with one of the terminals 22, 24, as shown in Fig. 3. When in such position the tension of the spring 32 is in-

creased by compression and prevents the accidental opening of the circuit.

The switch may be secured to a support by any suitable means. It is shown as adapted for attachment to a wall, the face plate 11 being apertured to receive attaching screws.

Various changes and modifications may be made from the selected embodiment of the switch within the scope of the invention.

I claim as my invention:

1. In an electric switch in combination, a plurality of contact elements arranged in line, the central element having a rounded face, a bridging plate recessed to receive the rounded face, and a telescopically extensible actuating lever having jointed engagement with the plate, and a spring for extending the lever.

2. In an electric switch, the combination of a switch housing, a switch lever pivotally mounted in the housing, a terminal block having raised contact members, a spring extended plunger adapted to reciprocate within a recess in the stem of the switch lever, a slide plate having a jointed connection with the plunger and adapted to provide electrical contact between adjacent contact members upon a given movement of the switch lever, said slide plate being apertured to receive one of the terminals when in neutral position.

3. In an electric switch, the combination of a switch lever, a terminal block having raised contact members, a plunger adapted to reciprocate within an end recess in the lever, a slide plate having a loose connection with the plunger, the slide plate being apertured to receive one of said raised contact members to insure a positive neutral position of the lever, and a spring between the plunger and the bottom of the recess exerting an increased pressure when the lever is moved from the neutral position.

4. In an electric switch, a switch lever, a terminal plate having raised contact members mounted therein, a slide plate having a loose connection with the lever and adapted to form electrical contact between adjacent contact members; the plate having a recess to receive one of the contacts when the switch is in open circuit position.

5. In an electric switch, the combination of a switch lever, contact members mounted in a terminal block and having convex contact surfaces extending above the face of the block, a slide plate adapted to slide upon said contact members upon movement of the lever to close a circuit between two of the contact members, the plate being provided with an aperture in its contact face to receive one of the contact members when the switch is in open circuit position.

6. In an electric switch, the combination of a switch lever, contact members mounted in a terminal block and having convex contact surfaces extending above the face of the block, a slide plate adapted to slide upon said

contact members upon a given movement of the lever, a plunger mounted in a recess in the lever for reciprocating movement therein and making a driving connection with the slide plate, a spring for exerting an outward pressure by the plunger on the slide plate, the plate being provided with an aperture in its contact face for receiving one of the contact members when the switch is in open circuit position, the spring resisting movement of the plate to open circuit position with augmented pressure.

7. In an electrical switch, a switch lever, a plurality of contacts, a slide plate adapted to close a circuit between two of the contacts, and means for maintaining the switch in a neutral position including a recess in the slide plate.

In testimony whereof I affix my signature.
LEE M. WILEY.

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